

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A microphone system for communication devices comprising:
- a. a first input sound port that leads into a first omnidirectional microphone element;
 - b. a second input microphone port that leads into a second omnidirectional microphone element positioned near the first microphone element; and
 - c. a signal flow processor electrically connected to the first and second microphone elements;

wherein the signal flow processor provides an electrical time delay (" τ ") only to the first microphone element, ~~such that the first microphone element's output undergoes a phase change substantially equal to that which a coupling acoustical traveling wave undergoes between the time the wave arrives at the first microphone element and subsequently arrives at the second microphone element, and provides a compatible amplitude gain only to the second microphone element;~~

whercin $\tau = (w-u)/c$, the variable "w" equals the distance between the receiver and the second sound port, the variable "c" equals approximately 345,000 millimeters per second, and the variable "u" equals $\sqrt{w^2 + d_2^2 - 2 d_2 w \cos(\kappa - \Psi)}$ with the variable "d₂" being equal to the distance between the first and second input sound ports, with the variable " κ " being equal to the angle of an ear reference point adjacent to the receiver and the second input sound port, and with the variable " Ψ " being equal to the angle of the first input sound port and the second input sound port; ~~—, such that the second microphone's output undergoes an amplitude gain substantially equal in magnitude to the amplitude attenuation which the wave undergoes between the time the~~

~~wave arrives at the first microphone element and subsequently arrives at the second microphone element, and~~

wherein the signal flow processor ~~only~~ subtracts the outputs of the first and second microphone elements to create a null that reduces external acoustic coupling.

2. (Cancelled).

3. (Cancelled).

4. (Currently Amended) The microphone system of claim 13, wherein the first and second input sound ports each comprise a sound input port of a mobile phone.

5. (Original) The microphone system of claim 4, wherein the mobile phone comprises a receiver positioned and located closer to the first input sound port than the second input sound port.

6. (Currently Amended) The microphone system of claim 5, wherein the signal flow processor makes the amplitude gain equal to unity ~~and the time delay is selected from a range between 0 and a value equal to d_2/c , wherein the variable " d_2 " equals the distance between the first and second sound ports and the variable " c " equals approximately the speed of sound.~~

7. (Cancelled)

8. (Currently Amended) The microphone system of claim 17, wherein the compatible amplitude gain (" G_{m1} ") is equal to $G_{m1} = (w/u)$.

9. (Currently Amended) The microphone system of claim 13, wherein the first and second input sound ports each comprise an input sound port of a speakerphone, wherein the speakerphone comprises a loudspeaker with its center located and positioned closer to the first input sound port than the second input sound port.

10. (Currently Amended) The microphone system of claim 9, wherein the signal flow processor makes the amplitude gain equal to unity ~~and the time delay is selected from a range between 0 and a value equal to d_2/c , wherein the variable " d_s " equals the distance between the first and second sound ports and the variable " c " equals approximately the speed of sound.~~

11. (Cancelled)

12. (Currently Amended) The microphone system of claim 944, wherein compatible amplitude gain (" G_{m1} ") is equal to $G_{m1} = (w/u)$.

13. (Currently Amended) A method for producing a null towards an acoustical driver of a communication device for reducing external acoustic coupling in the communication device, the method comprising the steps of:

providing a microphone system for telecommunications having

- (i) a first input sound port that leads into a first omnidirectional microphone element having a first output; and
- (ii) a second input microphone port that leads into a second omnidirectional microphone element positioned near the first microphone element, the second microphone element having a second output;
- (iii) a signal flow processor electrically connected to the first and the second microphone elements;

utilizing the signal flow processor to provide an electrical time delay (" τ ") ~~only~~ to the first output, wherein $\tau = (w-u)/c$, the variable " w " equals the distance between the receiver and the second sound port, the variable " c " equals approximately 345,000 millimeters per second, and the variable " u " equals $\sqrt{w^2 + d_2^2 - 2 d_2 w \cos(\kappa - \Psi)}$ with the variable " d_2 " being equal to the

~~distance between the first and second input sound ports, with the variable "k" being equal to the angle of an ear reference point adjacent to the receiver and the second input sound port, and with the variable "ψ" being equal to the angle of the first input sound port and the second input sound port such that the first output undergoes a phase change substantially equal to that which a coupling acoustical traveling wave undergoes between the time the wave arrives at the first microphone element and subsequently arrives at the second microphone element;~~

~~utilizing the signal flow processor to provide an amplitude gain-only to the second output, such that the second output undergoes an amplitude gain substantially equal in magnitude to the amplitude attenuation which the wave undergoes between the time the wave arrives at the first microphone element and subsequently arrives at the second microphone element; and~~

~~utilizing the signal flow process to only-subtract the first output from the second output to create a null that reduces external acoustic coupling.~~

14. (Currently Amended) The method of producing ~~a~~the null of claim 13, ~~wherein the method further comprises the step of providing a mobile phone having a first input sound port leading into the first microphone element, a second input sound port leading into the second microphone element, and wherein the acoustical driver comprises a receiver positioned and located closer to the first input sound port than the second input sound port.~~

15. (Cancelled)

16. (Currently Amended) The method of producing the null of claim ~~13~~4~~5~~, wherein the method further comprises the step of calculating the compatible amplitude gain ("Gm1") with the formula $Gm1 = (w/u)$.

17. (Cancelled)

18. (Original) The method of producing the null of claim 13, wherein the first and second input sound ports each comprise an input sound port of a speakerphone method further comprises the step of providing a speakerphone having a first input sound port leading into the first microphone element, a second input sound port leading into the second microphone element, and wherein the acoustical driver comprises a loudspeaker positioned and located closer to the first input sound port than the second input sound port.

19. (Cancelled)

20. (Currently Amended) The method of producing the null of claim 18~~19~~, wherein the method further comprises the step of calculating the compatible amplitude gain ("Gm1") with the formula $Gm1 = (w/u)$.

21. (Cancelled)

22. (Original) The method of producing the null of claim 14, wherein the electric time delay and compatible amplitude gain are each equal to a constant value with a finite number of discrete sub-bands across the communications band.

23. (Original) The method of producing the null of claim 18, wherein the electric time delay and compatible amplitude gain are each equal to a constant value within a finite number of discrete sub-bands across the communications band.

24. (Cancelled).

25. (Cancelled).